

### CHAPTER III

### METHODOLOGY

#### Subjects

This is a qualitative research study with a student population frame of 110 private college students in Klang, Selangor Darul Ehsan. The students are studying for their Diploma of Economics as external students of the University of London. It is an intensive one-year programme. They aged from 18 to 21 years old. They come from different academic qualifications such as S.P.M., S.T.P.M., Diploma level or the U.E.C. examinations. The students come from a diverse academic background. They were instructed in Mandarin and *Bahasa Melayu* during their primary and secondary schooling. The majority of the students are Chinese. There were only a few Indian students.

Out of the hundred and ten students, fifty-five students were randomly assigned to cooperative group learning and fifty-five students were randomly assigned to non-cooperative group learning. Smaller cooperative groups of three to six members were organised among the fifty-five students assigned to cooperative group learning. The students were given free choice to select whom they want to work with to ensure a more positive teamwork. A minimum of three and a maximum of six members in a group were suggested. This is to reduce the number of groups in a tutorial to enable easier class management and more intra-group participation. There were a total of eight tutorial classes. Four tutorial classes were randomly assigned to cooperative group learning strategy and four tutorial classes were randomly assigned to individualistic learning strategy.

Table 1

Distribution of Students in Cooperative and Non-cooperative Tutorial Classes

Tutorial classes	Cooperative	Tutorial classes	Non-cooperative
A	3 groups	E	No group
B	3 groups	F	No group
C	3 groups	G	No group
D	4 groups	H	No group

Table 1 shows eight tutorial classes A - H, of which classes A, B, C and D are cooperative and classes E, F, G and H are non-cooperative. In the four cooperative tutorial classes, thirteen cooperative groups were formed. The breakdown of these thirteen groups is as follows: two male-groups, nine female-groups and two mixed-groups. Cooperative tutorial classes A, B and C had three cooperative groups each while tutorial class D had four cooperative groups.

### Procedures

Cooperative group sessions were implemented for three terms for a total of thirty weeks. The cooperative and non-cooperative classes were given a total of six hours of instruction per week. The cooperative classes had three hours a week of lectures and three hours a week of cooperatively structured lessons. The non-cooperative classes were given six hours a week of lectures only.

Cooperative structured lessons required interdependence among the members of a group who work together on the same task. The students in cooperative groups are given group tasks during their tutorial classes. The students in cooperative groups

experience a task structure that is characterised by student interaction in small groups during tutorials (Slavin, 1980). On the other hand, students in non-cooperative groups experience only an individual task structure based on lectures. The individualistic structured classroom model is based on students being rewarded on the basis of their own work independent of the work of others. In such a model, there is no interdependence among students.

The tasks required of the students for the three terms are organised into modules. Each module is written in a set of behavioural objectives (Refer to Appendix A). The content focused on the nature of behavioural objectives as presented in the Taxonomy of Educational Objectives (Bloom, 1956). The syllabus consists of four sections. They are: Section A ( Theories and Methods), Section B ( Social Change), Section C (Social Inequality), and Section D (Power, Authority, and Bureaucracy).

At the beginning of each tutorial class, the tutor gave a brief twenty minutes introduction and explanation of the tasks to be completed for each tutorial session. Assignments consisting of typed list of questions were distributed to each group to be shared among the members. A sample assignment is provided in Appendix B. Then followed an hour of group discussions on the task given. Only if necessary, a break of about ten to fifteen minutes is given after about fifty minutes of the tutorial class.

At the end of each tutorial session, each group had to present their answers in the last forty minutes. Group answers were summarised and evaluated by the whole class with the guidance of the tutor. After the immediate feedback on their work in the class, the students had to hand in a typed group report of the discussions a week later.

Students had to play his or her role of group leader, recorder, elaborator, motivator or presenter each week. Group members select and rotate roles each week. They also decide on how the group task is to be divided and completed.

This research is similar in design to the Group Investigation Method by Sharan and Sharan (1976) which is the most complex of the American cooperative learning strategies. In their studies, children select sub-topics within a general area determined by the teacher, often in the field of science or social studies, and then organise themselves into groups of two to six. In cooperation with peers, they identify problems, plan the procedures needed to understand these problems, collect the data relevant to their plan and prepare a report. The social context of the peer group allows them the chance to examine data carefully and analyse their findings critically in collaboration with others. Finally, there is a group presentation to the class. This technique includes incorporating interdependence of task. The students take substantial responsibilities for deciding what they will learn, how they will organise themselves to learn it and how they will communicate it to their peers (Cowie, 1994). The cooperative groups were more student-centred. Students had the freedom to make their own decision to achieve the objectives given.

In the first session, students were informed on how to organise themselves into cooperative groups as follows:

1. Students were asked to form into small groups of three to six members.
2. Each group then selected their own group name.
3. Each group assigned roles to members such as leader, motivator, elaborator, and reporter. These roles should be rotated each week.

Face to face interaction between members was allowed for one to two hours a week. Members of each group arranged themselves in circular seating arrangements during tutorial classes.

4. Positive interdependence was required as each student need each other to complete the weekly task i.e. sink or swim together. Mutual goals, joint rewards, shared materials and information were encouraged. Positive interdependence of any group referred to the need of joint effort of all members to accomplish the objectives set.
5. Each tutorial was organised into learning modules and learning behavioral objectives such that each group member must be able to explain his or her answer individually in class presentation as well.

Two tests based on the syllabus were conducted during the implementation of cooperative group learning. It was not possible to conduct a pretest on all the students as the subject Sociology was completely new to them. Therefore, test 1 was administered in the sixteenth week of implementation and test 2 was administered in the thirtieth week of implementation to all students. This is to assess whether there is any improvement in the academic achievement test scores in Sociology as a result of the implementation of cooperative group learning.

There is high task interdependence as every tutorial consisted of group tasks and individual accountability for oral presentations of answer as well as group-written reports. There is little teacher-imposed structure and little group competition used.

### **Instrumentation**

The instruments used in this study are classroom observation checklist, structured group interviews, unstructured individual interviews, a five-point Likert attitude scale.

**Classroom observation checklist.** Classroom observations checklist are used to gather information on the group processes. Classroom observations are used to study if students' behaviour closely relate to their attitude in cooperative group work. Classroom observations were conducted for a period of thirty weeks. Logging of the observations was done immediately after each tutorial class. The observation chart in Appendix C was used to record students' behaviour during cooperative group learning. The observed behaviours were recorded according to the duration of time and frequency of occurrences per class. Qualitative comments on the events were also recorded as and when it occurred in each class.

**Structured group interviews.** Five groups were interviewed on two separate sessions, making it a total of ten group interviews conducted. The group interviews were conducted in the fifteenth week and the twenty-fourth week. By this time, the members of the groups would have formed some perceptions of their groups. Each group interview was carried out after a cooperative class session in the class and lasted about twenty minutes. Only a few questions from each category in the interview guidelines in Appendix D were chosen at each session as the students had a very busy schedule. There were six categories in the group interview guidelines. They were group background, cohesion of group communication pattern, atmosphere and organisation structure, standards, procedures, and goals.

**Unstructured individual interviews.** Unstructured individual interviews (Appendix E) were conducted at the end of the first and third terms. Six students were randomly interviewed individually in the first term. This to assess the initial perceptions of the students towards cooperative group learning. In the third term, another six students were interviewed. The purpose was to assess whether there is any change in their perceptions. The matrix of qualitative unstructured individual interviewing question options in Appendix E was used to assess students' behaviour, opinion, feelings, knowledge, sensory, and demographic background of cooperative group learning in their past and present experiences. They were asked whether they would participate in future cooperative group learning

Short notes were taken down during the interviews. After the interview, a record of the interview was written in full for later analysis of the databit. Then the databits were categorised. Once completed, an analysis for similarities, differences and repeat of the databits in all the interviews were conducted.

The databits of the interview were categorised and analysed. Students were informed and consented to interviews on their cooperative group learning. A content analysis of the unstructured individual interviews were conducted to elicit information of students' affective and behavioural beliefs of learning in a group..

**Likert Scale.** A Likert-type questionnaire was specially constructed, piloted and undergone item analysis for the purpose of gathering data on the attitudes of students towards cooperative group learning. This pilot 5-point rating scale consisting of 60 items was administered to a group of thirty-nine students. The Cronbach alpha reliability estimate was computed to be .89. This high internal consistency suggested

that the instrument was highly reliable for assessing students' attitudes toward cooperative group learning. Some of the items in the questionnaire are positively stated and others negatively stated. Positive statements have the rating '5' for 'Strongly Agree' and '1' for 'Strongly Disagree'. Negative statements were given a rating '1' for 'Strongly Agree' and '5' for 'Strongly Disagree'. Hence a statement such as 'I like learning in a group' will be rated '1' for 'Strongly Disagree' and '5' for 'Strongly Agree' while a statement such as 'Cooperative learning is not effective in my learning of Sociology' will be rated '1' for 'Strongly Agree' and '5' for 'Strongly Disagree'. An item-analysis using the Pearson-r correlation coefficient was performed on the responses of the students. Items with correlation of .40 and below were discarded. The revised rating scale consisted of twenty-six items of which items 2, 3, 6, 17 and 18 are negative items. This twenty-six items five-point Likert scale, shown in Appendix F, was used to measure students' attitude towards cooperative group learning. The item ratings of each student were linearly combined and the mean determined in order to assess the student's attitude towards cooperative group learning. The mean score on the Likert-scale for all the students form a composite attitude score for the group. A mean score of more than 3 will suggest positive attitudes whereas a score of below 3 will suggest less favourable attitudes among the students.

The four instruments were used to gather data on the main determinants and learning outcomes of effective cooperative group. The collected data provided a profile of effective cooperative group learning. Firstly, the observation checklist provided a more valid behavioral data of the dynamic processes of cooperative group



learning. Secondly, the structured group interview provided an opportunity to observe and assess how students' responded as a group to cooperative group learning. Thirdly, the unstructured individual interviews enabled an in-depth probe into specific areas of how each member of a group thought and felt towards cooperative group learning. Data collected from the group interview were compared and contrasted with the individual interviews. This is to improve on the validity of the data collected. Finally, the Likert-scale provided a more reliable and quantitative assessment of students' attitude towards cooperative group learning. The inclusion of qualitative and quantitative instruments in this study is to enhance the validity and reliability of the data collected.